Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method of correcting a red-eye effect in a digital image provided by a cluster of pixels, the method comprising:

(a) conducting at least one tophat operation over each pixel in the digital image to provide a tophat image;

(b) conducting an intensity threshold operation on the tophat image to provide a segmentation mask for segmenting objects in the digital image;

(c) for each segmented object in the segmentation mask, extracting at least one feature from at least one of the segmented object and a border region surrounding the segmented object and classifying the segmented object based on the at least one feature; and

(d) for each segmented object in the segmentation mask classified as red-eye effect in step (c), correcting the red-eye effect by re-coloring the segmented object to generate a corrected image.

2. (Previously Amended) The method as defined in claim 1 wherein the tophat image is a dark tophat image, and the tophat operation comprises the steps of:

conducting at least one greyscale dilation operation over each pixel in the digital image to provide a dilated image;

conducting at least one greyscale erosion operation over each pixel in the dilated image to provide an eroded image; and, subtracting the digital image from the eroded image to provide the dark tophat image.

3. (Original) The method as defined in claim 1 wherein the tophat image is a bright tophat image, and the tophat operation comprises the steps of:

conducting at least one greyscale erosion operation over each pixel in the digital image to provide an eroded image;

conducting at least one greyscale dilation operation over each pixel in the eroded image to provide a dilated image; and,

subtracting the dilated image from the digital image to provide the bright tophat image.

4. (Original) The method as defined in claim 1 further-comprising

generating at least one low resolution image from the digital image;

conducting a secondary tophat operation over each pixel in the at least one low resolution image to provide at least one low resolution tophat image;

conducting an intensity threshold operation on the at least one low resolution tophat image to provide at least one low resolution segmentation mask for segmenting objects in the digital image;

for each segmented object in the at least one low resolution segmentation mask, extracting at least one feature from one of the segmented object and a border region surrounding the segmented object and classifying the segmented object based on the at least one feature; and

for each segmented object in the at least one low resolution segmentation mask classified as red-eye effect in step (c), correcting the red-eye effect by re-coloring the segmented object.

5. (Currently Amended) The method as defined in claim ~~1~~3 wherein step (b) comprises, after intensity thresholding the bright tophat image, filtering out objects having a compactness below a threshold level of compactness to provide the segmentation mask.

6. (Original) The method as defined in claim 1 wherein step (c) comprises, for each segmented object in the segmentation mask, after extracting the at least one feature, comparing the at least one feature with a paradigmatic red-eye feature cluster to determine an associated probability that the segmented object is a red-eye defect, and classifying the segmented object as a red-eye defect if and only if the associated probability exceeds a threshold probability.

7. (Original) The method as defined in claim 1 further comprising selecting the digital image from an initial image.

8. (Original) A system for correcting a red-eye effect in a digital image provided by a cluster of high intensity pixels, the system comprising:

a memory for storing the digital image; and

means for performing the steps of

(a) conducting at least one tophat operation over each pixel in the digital image to provide a tophat image;

(b) conducting an intensity threshold operation on the tophat image to provide a segmentation mask for segmenting objects in the digital image;

(c) for each segmented object in the segmentation mask, extracting at least one feature from at least one of the segmented object and a border region surrounding the segmented object and classifying the segmented object based on the at least one feature; and

(d) for each segmented object in the segmentation mask classified as red-eye effect in step (c), correcting the red-eye effect by re-coloring the segmented object to generate a corrected image.

9. (Previously Amended) The system as defined in claim 8 wherein the tophat image is a dark tophat image, and the tophat operation comprises the steps of:

conducting at least one greyscale dilation operation over each pixel in the digital image to provide an dilated image;

conducting at least one greyscale erosion operation over each pixel in the dilated image to provide a eroded image;

subtracting the digital image from the eroded image to provide the dark tophat image.

10. (Original) The system as defined in claim 8 wherein the tophat image is a bright tophat image, and the tophat operation comprises the steps of:

conducting at least one greyscale erosion operation over each pixel in the digital image to provide an eroded image;

conducting at least one greyscale dilation operation over each pixel in the eroded image to provide a dilated image; and,

subtracting the dilated image from the digital image to provide the bright tophat image.

11. (Original) The system as defined in claim 8 further comprising means for generating at least one low resolution image from the digital image.

12. (Currently Amended) The system as defined in claim ~~8~~10 wherein step (b) comprises, after intensity thresholding the bright tophat image filtering out objects having a compactness below a threshold level of compactness stored in the memory to provide the segmentation mask.

13. (Original) The system as defined in claim 8 wherein step (c) comprises, for each segmented object in the segmentation mask, after extracting the at least one feature, comparing the at least one feature with a paradigmatic red-eye feature cluster stored in the memory to determine an associated probability that the segmented object is a red-eye defect, and classifying the segmented object as a red-eye defect if and only if the associated probability exceeds a threshold probability.

14. (Original) The system as defined in claim 8 further comprising a display for displaying n initial image; and a user-operable selection means for selecting the digital image from the large image.

15. (Original) The system as defined in claim 13 further comprising a user-operable selection means for selectably changing the threshold probability.

16. (Original) The system as defined in claim 8 further comprising

a display for displaying the corrected image;

a user-operable selection means for selecting an object in the corrected image to generate a corrected image; and,

a user-selectable manual override operation for (i) when the object has been classified as red-eye, uncoloring and reclassifying the object and (ii) when the object has not been classified as red-eye, reclassifying the object as red-eye and recoloring the object to correct for the red-eye effect.

17. (Original) A computer program product for use on a computer system to correct a red-eye effect in a digital image defined over a cluster of pixels, the computer program product comprising:

a recording medium;

means recorded on the medium for instructing the computer system to perform the steps of:

(a) conducting at least one tophat operation over each pixel in the digital image to provide a tophat image;

(b) conducting an intensity threshold operation on the tophat image to provide a segmentation mask for segmenting objects in the digital image;

(c) for each segmented object in the segmentation mask, extracting at least one feature from at least one of the segmented object and a border region surrounding the segmented object and classifying the segmented object-based on the at least one feature; and

(d) for each segmented object in the segmentation mask classified as red-eye effect in step (c), correcting the red-eye effect by re-coloring the segmented object to generate a corrected image.

18. (Previously Amended) The computer program product as defined in claim 17 wherein the tophat image is a dark tophat image, and the tophat operation comprises the steps of:

conducting at least one greyscale dilation operation over each pixel in the digital image to provide an dilated image;

conducting at least one greyscale erosion operation over each pixel in the dilated image to provide an eroded image;

subtracting the digital image from the eroded image to provide the dark tophat image.

19. (Original) The computer program product as defined in claim 17 wherein the tophat image is a bright tophat image, and the tophat operation comprises the steps of:

conducting at least one greyscale erosion operation over each pixel in the digital image to provide an eroded image;

conducting at least one greyscale dilation operation over each pixel in the eroded image to provide a dilated image; and,

subtracting the dilated image from the digital image to provide the bright tophat image.

20. (Currently Amended) The computer program product as defined in claim ~~17~~19 wherein step (b) comprises, after intensity thresholding the bright tophat image filtering

out objects having a compactness below a threshold level of compactness stored in the memory to provide the segmentation mask.